**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF TEXAS
WACO DIVISION**

FG SRC LLC,	
Plaintiff,	Case No. 6:20-cv-315
v.	JURY TRIAL DEMANDED
INTEL CORPORATION,	
Defendant.	

PLAINTIFF'S ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff FG SRC LLC ("SRC") files this Original Complaint for Patent Infringement ("Complaint") against Defendant Intel, Inc. ("Defendant" or "Intel"). Plaintiff alleges as follows:

I. NATURE OF THE ACTION

1. This is an action for infringement of U.S. Patent No. 7,149,867 (the "'867 patent").

2. SRC is a limited liability company incorporated in Delaware and is the successor to SRC Computers.

3. Defendant Intel is a corporation duly organized and existing under the laws of the State of Delaware, having a regular and established place of business in the Western District of Texas, including at 1300 S. Mopac Expressway, Austin, Texas 78746.

II. JURISDICTION

4. This action arises under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*, including 35 U.S.C. §§ 271, 281, 283, 284, and 285. This is a patent infringement lawsuit over which this Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

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5. This United States District Court for the Western District of Texas has general and specific personal jurisdiction over Defendant because Defendant is present in and transacts and conducts business in and with residents of this District and the State of Texas. Defendant has also purposefully and voluntarily availed itself of the privileges of conducting business in the United States, the State of Texas, and the Western District of Texas by continuously and systematically placing goods into the stream of commerce through an established distribution channel with the expectation that they will be purchased by consumers in Texas and this District.

6. Defendant maintains regular and established places of business in the State of Texas and in the Western District of Texas.

7. Plaintiff's causes of action arise, at least in part, from Defendant's contacts with and activities in the State of Texas and this District. Upon information and belief, Defendant committed acts of infringement in this District giving rise to this action and does business in this District, including making sales and/or providing services and support for its customers in this District. Defendant purposefully and voluntarily sold one or more of its infringing products with the expectation that they would be purchased by consumers in this District. These infringing products have been and continue to be purchased by consumers in this District. Defendant committed acts of patent infringement within the United States, the State of Texas, and the Western District of Texas.

8. Defendant, directly and/or through intermediaries, uses, sells, offers for sale, ships, distributes, advertises, and/or otherwise promotes products in this District and the State of Texas. Defendant regularly conducts and solicits business in, engages in other persistent

courses of conduct in, and/or derives substantial revenue from goods and services provided to residents of this District and the State of Texas.

III. VENUE

9. Venue is proper in this District under 35 U.S.C. § 1400(b) because: (1) Defendant has a physical place located in this District, (2) it is a regular and established place of business, and (3) it belongs to Defendant. *See In re Cray Inc.*, 871 F.3d 1355, 1360 (Fed. Cir. 2017).

10. Defendant maintains several facilities, which it refers to as campuses, in this District. https://www.intel.com/content/www/us/en/location/usa.html.

11. Defendant maintains a campus at 1300 S. Mopac Expressway, Austin Texas 78746. This is a regular and established place of business belonging to Defendant.

12. Defendant maintains a campus at 6500 River Place Blvd, Bldg 7, Austin Texas 78730. This is a regular and established place of business belonging to Defendant.

13. Defendant maintains a campus at 5113 Southwest Parkway, Austin, Texas 78735. This is a regular and established place of business belonging to Defendant.

14. Defendant operates its Programmable Solutions Group ("PSG") in this District.

15. Members of Defendant's PSG work in this District.

16. Members of Defendant's PSG work at one or more of its campuses in Austin, Texas.

17. Defendant acquired Altera Corporation ("Altera") in December 2015.

18. Defendant purchased Altera for approximately $16.7 billion.

19. Defendant acquired Altera at least in part because it was a "leading provider of field-programmable gate array (FPGA) technology." https://www.sec.gov/Archives/edgar/data/50863/000119312515414642/d105836dex991.htm.

20. Altera is now part of Intel. *Id.*

21. PSG was formed after Intel's acquisition of Altera. *Id.*

22. Altera was headquartered within the State of Texas at 3400 Waterview Parkway, #300, Richardson, Texas 75080.

23. Altera maintained a regular and established place of business at 9442 N. Capital of Texas Hwy, #1-850, Austin, Texas 78759.

24. Altera maintained a regular and established place of business at 5113 Southwest Pkwy, Austin, Texas 78735.

25. As part of Intel, PSG creates programmable logic devices, including FPGAs. https://jobsearcher.com/j/system-validation-engineering-intern-at-intel-in-austin-tx-AZGgGE?utm_campaign=google_jobs_apply&utm_source=google_jobs_apply&utm_medium=organic.

26. Intel was actively recruiting a System Validation Engineering Intern (the "Intern"), in this District, as of March 16, 2019. https://jobsearcher.com/j/system-validation-engineering-intern-at-intel-in-austin-tx-AZGgGE?utm_campaign=google_jobs_apply&utm_source=google_jobs_apply&utm_medium=organic.

27. Intel was or is recruiting the Intern to work in its PSG group. *Id.*

28. Intel was or is recruiting the Intern to work in its PSG group in Austin, Texas. *Id.*

29. Intel was actively recruiting a Network Performance and Analytics Engineer (the "Network Engineer") to work in this District as of April 11, 2020. https://jobsearcher.com/j/jr0132726-network-performance-and-analytics-engineer-at-intel-corporation-in-austin-texas-DDQVad.

30. One of the posted requirements for the Analytics Engineer is that said engineer has "Familiarity with Intel Processors, FPGA & NICs within a data center context."

https://jobsearcher.com/j/jr0132726-network-performance-and-analytics-engineer-at-intel-corporation-in-austin-texas-DDQVad.

31. Intel was actively recruiting a Systems Performance and Analytics Engineer (the "Systems Engineer") to work in this District as of April 11, 2020.

https://jobsearcher.com/j/jr0132727-systems-performance-and-analytics-engineer-at-intel-corporation-in-austin-texas-LW6Vdl.

32. One of the posted requirements for the Systems Engineer is that said engineer has "Familiarity with Intel Processors, FPGA & NICs within a data center context."

33. Intel was actively recruiting a Firmware Engineering Manager (the "Engineering Manager"), in this District, as of February 29, 2020. https://jobsearcher.com/j/firmware-engineering-manager-at-intel-corporation-in-austin-texas-2dBgdV?utm_campaign=google_jobs_apply&utm_source=google_jobs_apply&utm_medium=organic.

34. Intel was or is recruiting the Engineering Manager to work in its PSG group. *Id.*

35. Intel was or is recruiting the Engineering Manager to work in its PSG group in Austin, Texas. *Id.*

IV. FG SRC LLC AND DEFENDANT'S PRODUCTS

A. FG SRC LLC

36. SRC Computers, LLC ("SRC Computers") was co-founded by Seymour R. Cray, Jim Guzy, and Jon Huppenthal in 1996 to produce unique high-performance computer systems using Intel's Merced microprocessor.

37. SRC is the successor to SRC Computers.

38. Jim Guzy is a co-founder of Intel Corporation and served on Intel's board for 38 years.

39. Mr. Guzy was named to Forbes Midas List, which surveys the top tech deal makers in the world, in 2006 and 2007.

40. Seymour Cray was an American electrical engineer and supercomputer architect who designed a series of computers that were the fastest in the world for decades.

41. Mr. Cray has been credited with creating the supercomputing industry.

42. Unfortunately, Mr. Cray died shortly after founding SRC Computers.

43. But his legacy was carried on by Jon Huppenthal and a talented team of engineers that worked with Mr. Cray and Mr. Huppenthal for decades.

44. SRC Computers' focus was creating easy-to-program, general-purpose reconfigurable computing systems.

45. In early 1997, Mr. Huppenthal and his team realized that the microprocessors of the day had many shortcomings relative to the custom processing engines that they were used to.

46. As a result, they decided to incorporate dedicated processing elements built from Field Programmable Gate Arrays ("FPGAs") and that idea quickly evolved into a novel system combining reconfigurable processors and CPUs.

47. SRC Computers' heterogenous system had 100x performance, 1/50th of the operating expense, 1/100th of the power usage, and required 1/500th of the space of more traditional computer systems.

48. SRC Computers' proven systems are used for some of the most demanding military and intelligence applications, including the simultaneous real-time processing and analysis of

radar, flight and mission data collected from a variety of aerial vehicles in over 1,000 successful counter-terrorism and counter-insurgency missions for the U.S. Department of Defense.

49. SRC Computers offered its first commercial product in 2015 called the Saturn 1 server.

50. The Saturn 1 was 100 times faster than a server with standard Intel microprocessors while using one percent of the power.

51. The Saturn 1 was designed to be used in HP's Moonshot server chassis for data centers.

52. SRC Computers has had over 30 U.S. patents issued for its innovative technology.

53. SRC Computers' patent portfolio covers numerous aspects of reconfigurable computing and has more than 2,090 forward citations.

54. In February 2016, SRC Computers restructured into three new entities: a corporate parent FG SRC LLC, an operating company DirectStream, LLC ("DirectStream"), and a licensing entity SRC Labs, LLC.

B. Accused Products

55. In this complaint, Plaintiff accuses the following Intel products (collectively "'867 Accused Products") of infringing the '867 patent:

    (a) Agilex F-Series FPGA and SoC FPGA products including the AGF 004, AGF 006, AGF 008, AGF 012, AGF 014, AGF 022, and AGF 027;

    (b) Agilex I-Series SoC FPGA products including the AGI 022 and AGI 027;

    (c) Stratix 10 GX FPGA products including the GX 400, GX 500, GX 650, GX 850, GX 1100, GX 1650, GX 2100, GX 2500, GX 2800, GX 1660, GX 2110, GX 10M, GX 4500, and GX 5500;

(d) Stratix 10 SX SoC FPGA products including the SX 400, SX 500, SX 650, SX 850, SX 1100, SX 1650, SX 2100, SX 2500, SX 2800, SX 4500, and SX 5500;

(e) Stratix 10 TX SoC FPGA products including the TX 400, TX 850, TX 1100, TX 1650, TX 2100, TX 2500, and TX 2800;

(f) Stratix 10 MX FPGA products including the MX 1650 and MX 2100;

(g) Stratix 10 DX SoC FPGA products including the DX 1100, DX 2100, and DX 2800;

(h) Arria 10 GT FPGA products including the GT 900 and GT 1150;

(i) Arria 10 GX FPGA products including the GX 160, GX 220, GX 270, GX 320, GX 480, GX 570, GX 660, GX 900, and GX 1150;

(j) Arria 10 SX SoC FPGA products including the SX 160, SX 220, SX 270, SX 320, SX 480, SX 570, and SX 660;

(k) Cyclone 10 GX FPGA products including the 10CX085, 10CX105, 10CX150, and 10CX220;

(l) Arria V GX FPGA products including the 5AGXA1, 5AGXA3, 5AGXA5, 5AGXA7, 5AGXB1, 5AGXB3, 5AGXB5, and 5AGXB7;

(m) Arria V GT FPGA products including the 5AGTC3, 5AGTC7, 5AGTD3, and 5AGTD7;

(n) Arria V GZ FPGA products including the 5AGZE1, 5AGZE3, 5AGZE5, and 5AGZE7;

(o) Arria V SX SoC FPGA products including the 5ASXB3 and 5ASXB5;

(p) Arria V ST SoC FPGA products including the 5ASTD3 and 5ASTD5;

(q) Cyclone 10 LP FPGA products including the 10CL006, 10CL010, 10CL016, 10CL025, 10CL040, 10CL055, 10CL080, and 10CL120;

(r) Cyclone V E FPGA products including the 5CEA2, 5CEA4, 5CEA5, 5CEA7, and 5CEA9;

(s) Cyclone V GX FPGA products including the 5CGXC3, 5CGXC4, 5CGXC5, 5CGXC7, and 5CGXC9;

(t) Cyclone V GT FPGA products including the 5CGTD5, 5CGTD7, and 5CGTD9;

(u) Cyclone V SE SoC FPGA products including the 5CSEA2, 5CSEA4, 5CSEA5, and 5CSEA6;

(v) Cyclone V SX SoC FPGA products including the 5CSXC2, 5CSXC4, 5CSXC5, and 5CSXC6;

(w) Cyclone V ST SoC FPGA products including the 5CSTD5 and 5CSTD6; and

(x) Max 10 FPGA products including the 10M02, 10M04, 10M08, 10M16, 10M25, 10M40, and 10M50.

56. Each of the '867 Accused Products includes an FPGA.

57. In contrast to a purpose-built chip which is designed with a single function in mind and then hardwired to implement it, an FPGA is more flexible.

58. With an FPGA, a large majority of the electrical functionality can be changed; more specifically, said functionality can be changed by the design engineer, changed during the PCB assembly process, or even changed after the equipment has been shipped to customers out in the field.

59. FPGAs provide off-load and acceleration functions to CPUs, effectively speeding up the entire system performance.

60. FPGAs provide benefits to designers of many types of electronic equipment, ranging from smart energy grids, aircraft navigation, automotive driver's assistance, medical ultrasounds and data center search engines – just to name a few.

61. Today's FPGAs include on-die processors, transceiver I/O's at 28 Gbps (or faster), RAM blocks, DSP engines, and more. More functions within the FPGA mean fewer devices on the circuit board, increasing reliability by reducing the number of device failures.

62. FPGA functionality can change upon every power-up of the device.

63. Programming an FPGA is a matter of connecting them up to create the desired logical functions (AND, OR, XOR, and so forth) or storage elements (flip-flops and shift registers).

64. Unlike a CPU, which is essentially serial (with a few parallel elements) and has fixed-size instructions and data paths (typically 32 or 64 bit), an FPGA can be programmed to perform many operations in parallel, and the operations themselves can be of almost any width, large or small.

65. The highly parallelized model in FPGAs is ideal for building custom accelerators to process computer-intensive problems.

66. Properly programmed, an FPGA has the potential to provide a 30x or greater speedup to many types of genomics, seismic analysis, financial risk analysis, big data search, and encryption algorithms and applications.

67. Defendant's customers can use FPGAs to accelerate its applications more than 30x when compared with servers that use CPUs alone.

68. The speed increase is a result of the FPGAs handling computer-intensive, deeply

pipelined, hardware-accelerated operations, which also allows for highly parallelized

computing.

V. DEFENDANT RECEIVED CONSTRUCTIVE AND ACTUAL NOTICE

69. SRC Computers complied with 35 U.S.C. § 287 by (i) placing the required notice on all,

or substantially all, of its products made, offered for sale, sold, or imported into the United

States, or (ii) providing actual notice to Defendant.

A. Constructive Notice to Defendant.

70. For example, SRC Computers placed notices such as the following on all, or

substantially all, of its products since at least February 19, 2013:[1]

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[1] *E.g.,* https://web.archive.org/web/20100930014237/http://www.srccomp.com/techpubs/
patentedtech.asp.

71. The website listed in the notice, WWW.SRCCOMP.COM/

TECHPUBS/PATENTEDTECH.ASP, stated the following:

SRC® PATENTED TECHNOLOGY

SRC Computers holds fundamental U.S. and foreign patents covering hardware and software techniques for vastly accelerating data processing through the use of reconfigurable elements comprising one or more Direct Execution Logic blocks operating in conjunction with one or more commodity microprocessors.

SRC patented technology, with filing dates back to 1997, also includes a number of general applications of Direct Execution Logic computing systems for parallelizing the execution of user-defined algorithms including acceleration of web site access and processing.

SRC Computers has exclusive rights to the following patents:

72. The website also listed at least the following patents since September 30, 2010. The '867

patent, asserted in this case, is highlighted:

Patent #	Patent Title
6,026,459	System and method for dynamic priority conflict resolution in a multi-processor computer system having shared memory resources
6,076,152	Multiprocessor computer architecture incorporating a plurality of memory algorithm processors in the memory subsystem
6,247,110	Multiprocessor computer architecture incorporating a plurality of memory algorithm processors in the memory subsystem
6,295,598	Split directory-based cache coherency technique for a multi-processor computer system
6,339,819	Multiprocessor with each processor element accessing operands in loaded input buffer and forwarding results to FIFO output buffer
6,434,687	System and method for accelerating web site access and processing utilizing a computer system incorporating reconfigurable processors operating under a single operating system image
6,356,983	System and method providing cache coherency and atomic memory operations in a multiprocessor computer architecture
6,594,736	System and method for semaphore and atomic operation management in a multiprocessor

6,627,985	Reconfigurable processor module comprising hybrid stacked integrated circuit die elements
6,781,226	Reconfigurable processor module comprising hybrid stacked integrated circuit die elements
6,836,823	Bandwidth enhancement for uncached devices
6,941,539	Efficiency of reconfigurable hardware
6,961,841	Multiprocessor computer architecture incorporating a plurality of memory algorithm processors in the memory subsystem
6,964,029	System and method for partitioning control-dataflow graph representations
6,983,456	Process for converting programs in high-level programming languages to a unified executable for hybrid computing platforms
6,996,656	System and method for providing an arbitrated memory bus in a hybrid computing system
7,003,593	Computer system architecture and memory controller for close-coupling within a hybrid processing system utilizing an adaptive processor interface port
7,124,211	System and method for explicit communication of messages between processes running on different nodes in a clustered multiprocessor system
7,126,214	Reconfigurable processor module comprising hybrid stacked integrated circuit die elements
7,134,120	Map compiler pipelined loop structure
7,149,867	System and method of enhancing efficiency and utilization of memory bandwidth in reconfigurable hardware
7,155,602	Interface for integrating reconfigurable processors into a general purpose computing system
7,155,708	Debugging and performance profiling using control-dataflow graph representations with reconfigurable hardware emulation
7,167,976	Interface for integrating reconfigurable processors into a general purpose computing system
7,197,575	Switch/network adapter port coupling a reconfigurable processing element to one or more microprocessors for use with interleaved memory controllers
7,225,324	Multi-adaptive processing systems and techniques for enhancing parallelism and performance of computational functions
7,237,091	Multiprocessor computer architecture incorporating a plurality of memory algorithm processors in the memory subsystem
7,282,951	Reconfigurable processor module comprising hybrid stacked integrated circuit die elements
7,299,458	System and method for converting control flow graph representations to control-dataflow graph representations

7,373,440	Switch/network adapter port for clustered computers employing a chain of multi-adaptive processors in a dual in-line memory module format
7,406,573	Reconfigurable processor element utilizing both coarse and fine grained reconfigurable elements
7,421,524	Switch/network adapter port for clustered computers employing a chain of multi-adaptive processors in a dual in-line memory module format
7,424,552	Switch/network adapter port incorporating shared memory resources selectively accessible by a direct execution logic element and one or more dense logic devices
7,565,461	Switch/network adapter port coupling a reconfigurable processing element to one or more microprocessors for use with interleaved memory controllers
7,620,800	Multi-adaptive processing systems and techniques for enhancing parallelism and performance of computational functions

B. Actual Notice to Defendant.

73. Intel learned of the '867 patent and its infringement of said patent at least as a result of the filing and/or service of this complaint.

VI.   THE '867 PATENT

A. The '867 Patent is Owned by SRC.

74. On January 22, 2020, DirectStream assigned the '867 patent to SRC. The assignment was recorded with the USPTO on January 24 at Reel/Frame 051615/0344.

75. All maintenance fees have been paid to the USPTO to keep the '867 patent enforceable for its full term.

B. Description of the Asserted Patent.

76. The '867 patent is entitled "System and method of enhancing efficiency and utilization of memory bandwidth in reconfigurable hardware" and issued on December 12, 2006.

77. A true and correct copy of the '867 patent is attached as **Exhibit A**.

78. The '867 patent is valid and enforceable.

VII.   COUNT ONE: DIRECT INFRINGEMENT OF THE '867 PATENT

79. Plaintiff incorporates by reference all paragraphs above as though set forth herein.

80. Defendant has at no time, either expressly or impliedly, been licensed under the '867 patent.

81. Defendant has and continues to directly infringe the '867 patent by making, using, offering for sale, selling, and/or importing in or into the United States in violation of 35 U.S.C. § 271(a) the '867 Accused Products.

82. Defendant's direct infringement of the '867 patent by the '867 Accused Products has caused, and will continue to cause, substantial and irreparable damage to Plaintiff. Plaintiff is therefore entitled to an award of damages adequate to compensate for Defendant's infringement, but not less than a reasonable royalty, together with pre- and post-judgment interest and costs as fixed by the Court under 35 U.S.C. § 284.

83. Plaintiff adopts, and incorporates by reference, as if fully stated herein, **Exhibits B through G**, which are claim charts that describe and demonstrate how the '867 Accused Products infringe exemplary claims of the '867 patent. These charts collectively show that Intel infringes at least claims 1, 3, 4, 9, 11, and 12 of the '867 patent.

VIII.   COUNT TWO: WILLFUL INFRINGEMENT OF THE '867 PATENT

84. Plaintiff incorporates by reference all paragraphs above as though set forth herein.

85. Defendant learned of the '867 patent and of its infringement of that patent at least as a result of the filing of this complaint.

86. Defendant continues making, using, offering for sale, and selling the '867 Accused Products despite an objectively high likelihood that its actions infringe several claims of the '867 patent.

87. Defendant continues its infringement of the '867 patent despite its knowing that the asserted claims of the '867 were held valid on May 10, 2019 by the Patent Trial and Appeal Board in *inter partes* review proceeding IPR2019-00103.

88. Defendant's actions have not been consistent with the standards of behavior in its industry.

89. Defendant made no effort to avoid infringing the '867 patent.

90. Therefore, Plaintiff should receive enhanced damages up to three times the amount of actual damages for Defendant's willful infringement under 35 U.S.C. § 284.

IX. CONCLUSION

91. Plaintiff is entitled to recover from Defendant the damages sustained by SRC as a result of Intel's wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

92. Plaintiff has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action.

93. Plaintiff reserves the right to amend, supplement, or modify its allegations of infringement as facts regarding such allegations arise during the course of this case.

X. JURY DEMAND

94. Plaintiff hereby demands a trial by jury for all causes of action.

XI. PRAYER FOR RELIEF

Plaintiff requests the following relief:

A. A judgment that Defendant has infringed and continues to infringe the '867 patent;

B. A judgment and order requiring Defendant to pay Plaintiff damages under 35 U.S.C. § 284, including treble damages for willful infringement as provided by 35 U.S.C. § 284, and

supplemental damages for any continuing post-verdict infringement up until entry of the final

judgment with an accounting as needed;

C. A judgment and order requiring Defendant to pay Plaintiff pre-judgment and post-

judgment interest on the damages awarded;

D. A judgment and order awarding a compulsory ongoing royalty; and

E. Such other and further relief as the Court deems just and equitable.

Dated: April 24, 2020

Respectfully submitted,

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